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**WMG Service Systems Research Group
Working Paper Series**

**Sense-Making of Consumer Wellbeing in
Information Technology-Enabled Services
From A Relational Ontology Position**

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- Visualisation
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Abstract

Information technology (IT) built into products and services have become the key drivers for service innovation. How information technology-enabled services (ITESs) affect consumer wellbeing has increasingly become a concern to service scholars. In response to this, transformative service research (TSR) has emerged as a new stream in service research.

This paper investigates consumer wellbeing derived from the consumption of ITESs in consumers' daily lives. A mixed-method approach was employed in our study, including self-reflective reports, in-depth interviews and visual artistic methods. We demonstrated that a relational ontology, drawing on the 'focal things' concept (Borgmann, 1984) and sociomateriality (Orlikowski, 2009), could be used as a lens for us to understand consumer wellbeing in ITESs. We used four vignettes to demonstrate how relational ontology can enhance our understanding of consumer wellbeing in ITESs. Theoretically, this paper contributes to TSR by proposing and demonstrating the need to shift or at least extend the extant predominant technology ontology in marketing literature to make sense of consumer experiences and wellbeing in ITESs. In practice, this research encourages ITESs designers to emphasise the relational entanglement of technology with consumer routine practices in their service innovations for the purposes of consumer wellbeing.

Introduction

A review of recent literature reveals that research on information technology-enabled services (ITESs) has predominantly taken a managerial perspective i.e. focusing on the business concerns of such services. However, due to the pervasiveness or ubiquity of ITESs, there is increasing concern with the societal effects of ITESs (Rosenbaum and Wong, 2012). In response to these concerns, service scholars (Rosenbaum, et al, 2011; Anderson, et al, 2013) have called for transformative service research (TSR), aiming towards 'understanding the role of services and service customers themselves play in affecting consumer wellbeing' (Rosenbaum, et al, 2011, p.3).

Existing research on consumer wellbeing in ITESs has focused mainly on studying specific types of ITESs and their effects on wellbeing at both individual and societal levels (e.g., Ducheneaut, Moore and Nickell, 2007; Rosenbaum and Wong, 2012). These studies have primarily concentrated on outcomes of consumer usage of specific ITESs, which are treated as separated (standalone/detached) entities. The consumer wellbeing studied is mostly subjective wellbeing. Nonetheless, research on wellbeing has addressed the importance of '*embracing the whole individual*' (Bourne, et

al, 2009) by looking at the positive impact and outcomes of fulfilment of multiple roles/identity for individual wellbeing. During our empirical studies of consumer experiences of ITESs, one emergent theme was that consumers and ITESs are not mere separate entities, but are entangled in consumers' routine practices. Thus, we argue that in order to understand consumer wellbeing in the consumption of ITESs, it is necessary to shift the focus on users' direct experiences with ITESs as separated entities, to view ITESs as artefacts entangled with consumers' routine practices and embedded in their lived lives. The views regarding what ITESs means for consumers and the relationship between ITESs and consumers entail different ontological positions. Thus, this shift of focus represents a shift of ontological positions from 'separatedness' to 'relational'.

This paper is conceptual in nature and aims to demonstrate the needs to turn to relational ontology for sense-making of consumer experiences in ITESs. This paper employs a mix-method approach including self-reflective reports, in-depth interviews and visual artistic methods. The analysis is reported through a set of four vignettes, isolated from the data as they reveal the focal purposes of ITESs. We have identified that ITESs can be 'focal' (1) by being an artefact entangled in consumer routine practices and in the virtual world, and (2) through forming assemblages with consumers to perform routine practices as an entity. This paper contributes to transformative service research by first demonstrating and then proposing the need to extend the extant technology ontology in marketing literature to make sense of consumer wellbeing as constituted within ITESs. This research also encourages ITESs designers to emphasise the relational entanglement of technology with consumer routine practices in service innovations for the purposes of consumer wellbeing.

The structure of this paper is as follows: first, we frame the theoretical foundations for the paper by describing the theories on technology ontology and wellbeing. Second, we describe our methodology and methods. Third, we use four vignettes to demonstrate how a relational ontology can enhance our understanding and describe consumer wellbeing in ITESs. Finally, we propose managerial implications for managers and designers of ITESs.

Theoretical Foundations

Technology Ontologies

Technology ontology entails the understanding of what technology is and the relationship between technology and the person. In marketing literature, consumer research studies investigating consumers' experiences of technology (e.g., Mick and Fournier, 1998; Kozinets, 2008) have regarded technology as exogenous forces that affects human behaviour and their outcomes. In service literature, Service-Dominant (S-D) logic defines service

as the application of skill, knowledge, and competencies for the benefit of others (Vargo and Lusch, 2008). S-D logic assumes implicitly that competencies and skills are embodied in technology and in humans separately, and technology is assumed to be resources that users explicitly draw on in performing their tasks for the desired outcomes. Thus, the value of service is emergent and relevant for the people engaging with them. Therefore, we suggest that in marketing literature, the separateness ontology has been the primary technology ontological position, which views technology and human as essentially different and separated entities (Orlikowski, 2009). This ontology has been represented by ‘technological determinism’ and ‘social construction of technology’ (Pickering, 2005). Technological determinism regards science and technology as ‘*autonomous motors of social change*’ (Pickering, 2005, p.355). This is also described as the notion of technology as ‘exogenous forces’, in which technology regarded as instruments can directly affect human behaviour and exert impacts on human outcomes (Orlikowski, 2009). The notion of ‘social construction of technology’ argues that scientific and technological development relies on ‘social variables (social structure, social interest, etc)’ (Pickering, 2005, p.357). This notion echoes what is described as the ‘emergent process’, in which technology is regarded as socially defined artefacts and relevant to people engaging with them. Thus, the design, meanings and usages of new technologies are shaped by situated actions of social groups (Orlikowski, 2009).

In contrast to a separatedness approach, relational ontology (Latour, 2005; Pickering, 2005; Orlikowski, 2009) emphasises that human and technology are not separated entities but entangled in relationships and practices. Indeed, competencies and skills are embodied in neither technology nor human but are ‘*enacted in practice, and the focus is, mingles assemblages, etc*’ of human and technology (Orlikowski, 2009, p.12). Within relational ontology, theorists have developed various theoretical approaches such as the actor-network and sociomateriality based on their understanding of the relationship between material agency, human agency and human intentionality (Latour, 2005; Pickering, 2005; Orlikowski, 2009). We argue that a relational ontology can provide a lens for us to make sense of consumer consumption of ITESs, by emphasising the entwinement of the consumer and ITESs in consumer routine practices in a way which avoids either technological or social determinism. In the next section, we develop a theoretical framework integrating Borgmann’s concept of the focal thing and aligning it with a sociomaterial approach.

Borgmann (1984) emphasises the thing’s world in which exist a wide range of possibilities, in terms of its properties, uses, its perspectives and its relationships. Borgmann (2000) suggests that by entangling with things, we can engage bodily and socially with this world of things and bring forward the possibilities of things. Borgmann (1984) describes ‘focal things’ or ‘focal reality’ in terms of our engagement (mind, body and social) with the things’

world and our life around things. Strong and Higgs (2000) summarise the three aspects of the focal things. First, being focal is referred to the things' capacity to demand our skills, discipline and resoluteness. In order to help the things to come forth, we have to practice to equip ourselves with the skills required. These practices and skills can transform the person who in turn can develop certain characteristics to become a match for the thing. Second, being focal is associated with the capacity of the thing to be a material centre for the ties of human relationships and its connections to natural and cultural settings. Third, things can '*unify the means and ends, achievements and enjoyment, competence and consummation, mind and body, body and the world, individual and community...*' (Strong and Higgs, 2000, p.23). Bergmann's (1984) original theory focused on traditional things such as fireplaces, musical instruments, roads for running and so on.

We suggest that Borgmann's focal thing concept can be aligned with a sociomaterial understanding of the relationship between technology and human person. Indeed, we argue that things can engage in a human person's lived world through entwinement with the person's routine practices. Human person and ITESs are entangled in the 'world' consisting of other things and other persons in human routine practices. For the human person, his/her socialised and embodied skills and competences enable them to perform shared social and cultural practices, which in turn generates meanings and values for them. In this process, the possibilities of things can be brought forth through their relationships with the individual, other things and other people in the individual's lived world and through their entanglement with the individual's performance of their socio-cultural practices. The performances of routine practices entail the human and the thing as an assemblage rather than separated entities. These performances occur in the world, which is a 'relational totality' consisting of the thing, other things, other people and the person in action. Thus, we argue that the possibilities of things and their effects on the human person's wellbeing lies in their entanglement, the relational totality of the individual's lived world and with the individual's performance of socio-cultural practices for their goals and projects in the lived world. This relational ontology can be used as a lens to make sense of consumer wellbeing derived from consumer-ITESs entanglement.

Happiness and Wellbeing

Research has investigated the consumption of ITESs such as massively multiplayer games (Ducheneaut, Moore and Nickell, 2007), online social networks (Steinfeld, Ellison and Lampe, 2008), instant messaging services (Rosenbaum and Wong, 2012) and the consequent wellbeing. It can be suggested that existing research on consumer wellbeing in ITESs has taken the outcomes of consumer usage of specific ITESs as the central concern by focusing on individual experiences of ITESs as a separated (standalone/detached) entity. User wellbeing has mainly focused on

subjective wellbeing. In wellbeing literature, subjective wellbeing is to do with happiness and life satisfaction (Keyes, Shmotkin and Ryff, 2002). Happiness is a reflection of pleasant and unpleasant affects in one's immediate experience (Keyes, Shmotkin and Ryff, 2002). Life satisfaction is 'a cognitive component' (Linley et al, 2009, p. 878), which is a judgemental, long-term assessment of one's life (Keyes Shmotkin and Ryff, 2002). In service research, subjective wellbeing has been measured by factors such as '*perceived stress-free being; state of morale; perceived health status; satisfaction about relationship; interest in life; control of emotion and energy*' (Rosenbaum and Wong, 2012).

Research on wellbeing (e.g., Bourne et al., 2009) has demonstrated that experiences in relation to the participation of multiple social roles can produce positive outcomes for an individual's psychological wellbeing (Bourne et al., 2009). Thus, it can be argued that in addition to the direct experiences of ITESs as an entity and the resultant subjective wellbeing, the nature-fulfilling and self-fulfilment roles played by ITESs when they are engaged in consumers' routine practices are crucial for consumers' psychological wellbeing. In wellbeing literature, psychological wellbeing has drawn heavily on '*formulations of human development and existential challenge of life*' (Keyes, Shmotkin and Ryff, 2002, p.1008). From this perspective, psychological wellbeing has been measured by factors such as '*positive relationship with others, self-acceptance, purpose in life, autonomy, environmental mastery and personal growth*' (Ryff, 1989; Linley et al., 2009, p.878) or factors such as '*meaning, autonomy, competence and relatedness*' (Sammam, 2007; Linley et al., 2009, p.879). Research has revealed that participation of multiple social roles can produce positive outcomes for the individual's psychological wellbeing (Bourne et al., 2009). Indeed, Haybron (2001) identifies happiness with the person's emotional conditions as a whole by 'fulfilling our natures' (Haybron, 2008). For Haybron, a specific form of nature-fulfilment is the fulfilment of the self, an intrinsic prudential value, which can be associated with 'authentic happiness' (Haybron, 2008).

Thus, we argue that in order to understand consumer wellbeing in their experiences of ITESs, it is necessary to shift the focus on user interactions with ITESs as separated entities to view ITESs as artefacts entangled with consumer routine practices and embedded in their lived lives. Thus, this paper aims to demonstrate the relational ontology by employing Borgmann's focal thing concept aligned with sociomateriality which could become a theoretical lens to enhance our understanding of consumer wellbeing in ITESs.

Study Context and Methodology

This paper uses qualitative methodology. Qualitative research is often characterised by the use of multiple methods, which is often referred to as triangulation. There are a number of different methods to be used in

qualitative research such as participant observation, analysis of texts and documents, interviews, recording and transcribing (Dooley, 2001). The logic behind using multiple methods is to secure an in-depth understanding of the phenomenon in question. The qualitative data used here is primarily drawn from a research-funded project aiming to make sense of IT-enabled society through investigating participants' experiences of ITESs.

The study sought to deepen the understanding of ITESs in consumers' lived lives by richly exploring a limited set of users' experiences of devices and IT-enabled services at home on a weekend. Firstly, participants wrote their reflective diaries about their weekends by focusing on their usage of ITESs on one weekend in their home settings. Secondly, in-depth interviews were conducted to solicit a deeper understanding of how ITESs are intertwined with the participants' routine practices in their daily lives, which provided further insights. A total of seven in-depth interviews were conducted over three months. The in-depth interviews have been more human centred. Thirdly, with the permission of the individuals, we visited their homes to observe, take notes and record their narratives about the ITESs in their lived lives. Dialectagrams, as a method, explore the use of illustration as a record. Superficially a pastiche of scientific, anthropological and architectural illustrations, dialectagrams comment upon contemporary city spaces, public, private and personal, through creating an extremely detailed schematic of a place that condenses and includes both subjective and objective information into a single piece. Dialectagrams show facts, thoughts and feelings. They use a deliberately loose and organic 'anti-architectural' drawing style to describe not just what is there, but who uses it, what a particular space means to someone, and how relationships between people shape their environment (see Figure 1).

The analysis aimed to identify meaningful patterns in the data that would enhance our understanding of consumer wellbeing in their entanglement with ITESs in their daily lives. In the data analysis, participants' narratives were interpreted alongside the dialectagrams. The dialectagrams could capture the realism of the space and practice of human activity, which allow the researchers to follow the technology actors alongside the humans and to align these two. Participants' phenomenological descriptions and their reflective diaries were interpreted according to the criteria noted by Thompson, Locander and Pollio (1989).

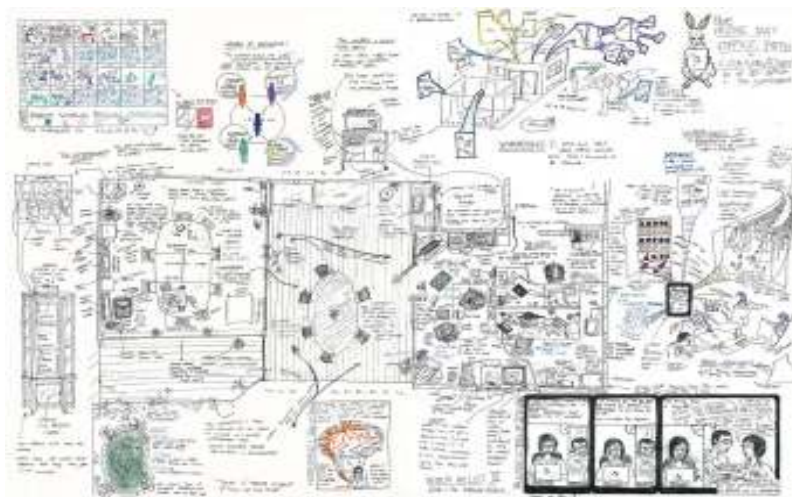


Figure 1: An example of a Dialectagram

During the data analysis process, one problem encountered was the difficulty in making sense of consumer experiences in ITESs within the extant separatedness technology ontology in marketing literature. This analytical problem needs us to turn to a relational ontology to enhance our understanding of consumer-ITESs entanglement. The analysis is reported through a set of four vignettes, isolated from the data as they reveal the focal purposes of ITESs. In the next section, each vignette is presented with its analysis and discussed, slowly building an empirical case for the relational ontology as proposed earlier. These discussions then build up to a concluding discussion which draws the themes together.

Analysis

Vignette 1: *Entanglement in the routine practices*

ITESs can be ‘focal’ by being artefacts entangled in consumer routine practices. The following vignette of Helen’s experience with customisation and shopping sites is one such illustration.

Helen, who is in her 40s, is a teaching fellow with a university. In her daily life, she is a creative person who enjoys photography and painting, often turning her artwork into unique gifts for her friends and family. Indeed for Helen, in a consumerism society, it is very important for her to give gifts containing personal messages and meanings to show her love and care. Helen described her entanglement with customisation websites:

I do a lot of photography. I like websites where I can make up my own greeting cards using my own artwork. ... Most of my friends are quite well-off,..., the gifts have to be jokey or fun and very customised..., I like the creative process of playing around with them. ...I like the process of making it personal or feeling part of that process of creating it. ...The process. Investing myself in that gift. I can easily sit there or two and half hours..., it is a bit creative because to me it's the same as going with a pot of glue

and having a creative exercise. I want to see it on the screen and work on it like that. (Helen).

The customisation websites provide templates and simple tools which demand the users to develop their skills to bring forth the possibilities of these tools and achieve outcomes. From Helen's experiences, we suggest that resources available on the websites combined with her own competencies (her photograph skills and creativity) enable her to create unique greeting cards for her friends. Indeed for Helen, designing cards online is comparable to doing creative exercises by 'going with a pot of glue' and seeing it 'on the screen'. In the design process, the material agency of the technology is delegated to act for its users. The users utilise technology with their distributed competencies to co-create the outcomes for achieving their goals. Technology's enabling capacity for activities has to be realised by the enabled users in their practical activities.

Consumers and the ITESs are entangled in time, space, and other people in the lived world. For Helen, customisation websites are not simply instruments separated from -- but are part of -- her creative exercises/practices; they are intertwined with her creative activities. With Helen's emphasis on her life projects and goals, we suggest that these websites are not only used as a separated entity (tool) but are also entity-intertwined with her routine practices in gift-giving, which in turn involves other people and things in her lived life and also connect people, things and cultural practices.

Entanglement between the consumer and the ITESs can combine the means and ends, achievements and enjoyment. Indeed, Helen emphasised that she can invest herself in the process. As a creative person, by combining the competencies of the customisation websites, she could achieve self-fulfilment through (1) constructing her creative self; (2) designing personalised gifts for friends and family to present her relational self and show her love (authenticity), which can enhance her sense of contentment, control and meaning; and (3) bringing forth the possibilities of the customisation website by involving it in her physical and social world. Thus we can suggest that self-fulfilment entails not only pleasure or amusement but also joy and contentment. In the design process, consumers can also obtain pleasant affects and experiences, such as flow experiences (Csikszentmihalyi and Hunter, 2003) (hedonic happiness). They can also gain a sense of achievement and deep satisfaction through connecting to the creative self (psychological happiness) and linking to the relational self and love by creating something personal and unique for loved ones (psychological happiness).

Helen's entanglement with ITESs in her routine practices is revealed throughout her interview. For example, she described her experiences of using an online shopping site:

First stop is on-line. ...Yes, books, music, everything will be on-line. ...If I want something unusual, I love to go to eBay...there has never been anything I cannot find on eBay that I needI wouldn't have been bothered but because they made it really easy for me to do. ...The other thing on a website is that I really like Paypal because I don't want to go and find my purse. So, I just want to go straight to buy the thing as fast as possible (Helen)

From Helen's experience, online shopping can give her pleasant experiences and affects (being convenient and time-saving), which constitute hedonic happiness. In addition to these functional values, we could argue that online websites have become intertwined with her way of shopping.

Helen also described how online shopping websites like eBay allow her to get unique things for her friends and family:

The aunt ...I wanted to find her an antique book ... the year she was born ...a children's book so that she would see it and go, 'oh, I remember being a child. She was seventy. ... on eBay I just typed in the year she was born ... and I found one..., and when she opened it, she burst into tears and that's the kind of reaction... I think that is what you strive for in such a consumerism society because you can get all of these things, yourself, quite cheaply (Helen).

For Helen, eBay is not a shop-window to be browsed, but something to be controlled, autonomously harnessed to achieving things previously unavailable. Helen believed that eBay might enable the discovery of antique books of a particular year, and the website empowered her to create value, through its search function, from what existing bookshops might categorise as unsaleable junk. Helen's competencies and skill in expressing desires were entwined with eBay's competence and skill in searching for items to satisfy these desires as Helen found the book. eBay's competencies were recognised by her, and by using her own ideas and competencies, she could perform well in purchasing unique gifts to show her love and care (her projects) in social contexts such as birthdays. When consumers regard the ITESs as part of their routine practices, they can really harness the competencies of these tools to achieve their projects in their lived lives. We show that ITESs can empower consumers in terms of autonomy and control of (1) their activities in their lived lives, and (2) of relationships, love and care, which can constitute contentment, joy and deep satisfaction, helping them achieve psychological happiness. In this sense, the ITESs, consumers and their physical world (time and space and their routine lives) are connected and entangled.

This case study reveals a person whose routine practices are entwined with the constant harnessing of different websites, brought to service (the ordering of personalised things) through an entwined process of design and consumption – both involving technology and human. These websites are

more than simply consumption and shopping tools, as the ITESs are entwined with the doing of practice, with what Helen spends her weekends accomplishing.

We could suggest that Helen's experiences of ITESs could make sense when we regard technology and consumers as an 'entanglement of practices'. This notion of technology represents the relational ontology, which views skills and competencies as embodied in neither technology nor consumers. Skills and competencies are delegated to ITESs, which act for consumers' intentionality. Consumers harness the material agency of the ITESs when they perform their routine tasks in their world. Thus, in this sense, the ITESs become focal things, whose possibilities can only be brought forth by consumers utilising their skills and competencies. Due to the entanglement of routine practices, consumer wellbeing derived from the experiences of ITESs entails not only 'hedonic happiness' but also psychological happiness through self-fulfilment and achievement of projects and goals in their lived lives.

Vignette 2 : *Entanglement in the virtual practices– Dark side of focal things*

ITESs can be 'focal' by being artefacts entangled in relationships and in practices with consumers in the virtual world. One vignette that can be used to illustrate this consumer-ITESs entanglement is Roger's experience with multiplayer computer games.

Roger, who is in his 40s, is a university professor. Roger described his experiences of playing the Minecraft game with his son.

He was, in Minecraft, when he booted up you got two choices. You can go to an online world, or you can go to a created world, where you just build stuff...' There is a world out there and we were reading a blog last night saying 'your first night in Minecraft, you will have to get yourself some firewood and survive the night' ... what is this? It sounds fantastic. You've got to survive a night in Minecraft, and he was, I think, he was quite intrigued and excited... but also quite fearful of what is this networking?

Roger also described his nephew's experience with Xbox 360 live games:

My nephew... got an Xbox 360. He's on Xbox live.... So he's into that, but it's like a whole new dimension of socialising you know, through the headsets, talking about when you're... playing his games. Black Ops games and he's shooting people on the head and I am just, like... you are you are old when you get appalled by that and like, excited. ... So you know, he's having these chats and these conversations in this life and again, another dimension of social networking that obviously is its own thing. ... (Roger).

From the participants' description, we suggest that computer games have been designed in a way that mimics the 'focal thing' as described by

Borgmann (1984). Games demand our skills, discipline and resoluteness in order to make them last and progress. In order to gain these skills, we have to practice to develop the ability to bring forth the possibilities of the games. Eventually the player designs and even develops a persona or character which can be recognised and acknowledged by other game players. The construction and maintenance of the virtual self can give the player a sense of self-fulfilment, which entails psychological wellbeing. Indeed, our engagement with the game includes our mind, our 'virtual' body and social engagement in its own world, the virtual world. The games can connect with others and become the centre for relationships between game players in the real world and between their personas in the virtual world. Players can obtain sociality ('the sheer pleasure of the company of others', Simmel, 1949), company and involvement in the community, which entails a sense of collective/group identity associated with psychological wellbeing. It can be suggested that the game can link the means and ends, achievements and enjoyment, individual and community, as focal things do (Borgmann, 1984; Strong and Higgs, 2000, p.23). Players would obtain flow experiences through their involvement in the games which demand attention and skills. Players would also have peak experiences when they complete the tasks by acquiring the skills, thus obtaining a sense of achievement. Thus, we suggest that consumers can obtain both hedonic and psychological happiness.

We can see the difference between Helen's use of customisation websites for her creative practice with clear projects in her lived world and Roger's experiences of virtual games in a primarily virtual world. In both cases, the users and the ITESs are entangled. Customisation websites embody the intertwinement of the practices, which is more engaged in the consumer's social, physical, and lived world. However, the virtual games are more engaged with virtual reality, which can potentially disengage the consumer from his or her physical, lived world. From their experiences, these ITESs do reveal some features comparable to the focal things described by Borgmann (1984) such as commanding skills and commitment required from the things and possibilities of things brought forth by the user, being the material centre for connection to cultural practices and the formation of relationships. What is clear is that ITESs and consumers are not separated realities but are entangled in relationships and practices.

Vignette 3: Assemblage entangled in routine practices

ITESs manifest characteristics of 'being focal' by forming assemblages with consumers, which perform routine practices as an entity. This can be illustrated in the following vignette of Clare's experience with her iPad.

Clare, in her 40s, is a university professor. She loves her devices, which have become an important part of her life and are central to organising her time

and activities with her family and friends. Indeed, she argues that she and the iPad have become one entity; 'Clare's iPad'. This arguable assemblage was recognised by her family, who gave it a Facebook Persona which was also accepted by her friends because they started to do things with Clare's iPad, which they would normally do with Clare.

Last Christmas, they created a Facebook persona. It's called Clare's iPad and over the course of one month it made friends with all my Facebook friends whom I was trying to stop them making friends with...[]They spent a whole month at Christmas okay taking the mick with this persona [...]But that's the relationship. They know mum loves her devices, loves her technology.

Indeed, due to her relationship with her iPad, for her family and friends, Clare and her iPad possess one common persona, which represents some of Clare's characters to match the 'thing'. Even though her family and friends played a game with her, it hints at the complex entwined nature between the iPad and Clare, including not only the device and Clare but also involving others through interactions and practices.

In the interview, Clare also talked about her practices of using devices and their applications such as the Wardrobe Assistant and Skype applications.

I use technology very, very well because I was an ex-programmer so I know exactly what technology can and cannot do. [...] This is my wardrobe alright. All my clothes are all here (on the Wardrobe Assistant app).[...]So when they are here I can see and by seeing I can then create looks. ...It's not possible, all your shoes, what you're living in a big walk-in wardrobe? [...] I can do it here. I can do that in bed and I think, what am I going to wear tomorrow?

In fact, as an ex-programmer, Clare's knowledge of technology has enabled her to bring forth the possibilities of the thing and to create the desired outcomes for herself.

Sometimes, my daughter says, you are not allowed to use your iPad. You're not allowed to work. [...] My iPad is my quality of life. It's not work.

For Clare, her devices (iPhone and iPad) have become part of her quality of life. The devices and Clare are so entwined in her routine practices that they form an 'assemblage', acting as one entity which brings about the joy, content and satisfaction through fulfilling her multiple roles and sharing love.

When my husband is abroad, he will be on SKYPE and he'll be on video and I may be doing my work and I will say oh, come on, you are going to have a walk with me in the garden, the tulips are out. [...] That instrument, that device was my company in a sense it gave me company, it kept me company. [...] it's what I call presence. ...it is as though he is beside me. So it created a present space that allows me to have his company where I want it... (Clare).

From Clare's experiences, we can see that instruments are not just a separated entity for humans to act upon for their purposes. The material agency of the instruments is entwined with human agency and intentionality, which are analytically indistinguishable. And the entwinement enables the human to intentionally engage with the physical and lived world for their life project through their routine practices. Human and technology are entwined within all of Clare's practices (as a sociomaterial entity – a kind of cyborg, Harraway 1991a;1991b); her work, entertainment with family, interaction with friends. Neither Human-Clare (as naked human) nor device (as inert metal and plastic) can be analytically separated within these practices. Thus, understanding such practices require a relational ontology which can organise her work and life; her entertainment with her family; a space for her to connect and interact with her friends and family. Clare and her devices are indispensable to one other. Thus, we could suggest that Clare's experiences with her devices can only make sense from a relational ontology.

In terms of wellbeing, the assemblage with the ITESs makes Clare's life better organised to improve her perceived life satisfaction, which entails subjective wellbeing. In addition, the assemblage also enables her to engage in multiple social roles in her routine practices to enhance self-fulfilment, which in turn enhances her psychological wellbeing.

Vignette 4: Assemblage entangled in routine practices: Dark side of assemblage

There is however also a dark side to consumer-ITESs assemblage, and one vignette that can be used to illustrate this is John's experience with his Blackberry phone.

John, in his early 40s, is a university professor. In his interview, he talked about his experiences of using devices.

I am always on my Blackberry. ... Even this weekend, I am always moving up and down, any time my light flashes on my phone, I answer because otherwise emails go down and I never get to go back to those emails. So, if I read, I reply and I do tend to read most. So I tend to reply to them. So, in a sense it's good that I don't really have a lot of emails waiting when I go into Monday...

For John, his Blackberry is a focal thing. The Blackberry and John are entangled, to the extent that the Blackberry demands his commitment by acting in a way for its own efficiency. Indeed, we can argue that in this empirical case, the agency of ITES devices demands this user to respond – the Blackberry appears to be in charge. John described how he has been ordered by his Blackberry:

I think that's where the technology is pretty bad because emails pops up, texts pop up and you know... , because it is a kind of inquisitive what is coming in and that is bad. ... (John).

John described how he checked his emails when he was crossing the road while walking with the kids in the morning; when he drove his car with two young kids sitting in the back; when his kids played games in the local gym; when his daughter asked for help with her homework.

I think if the technology wasn't there, the email wasn't there, I won't have done that.

During the interview, he regularly used the word 'bad', 'should not be doing this', 'distraction' and 'losing concentration'. However, he also emphasised the 'opportunity' and 'strong network' created by the technology. ITESs such as emails and Skype enable people to work and connect to each other 24/7. Thus, ITESs demand people to work all hours across the globe in terms of connecting and collaborating with each other, which seems to be a growing practice and culture in academia. In this sense, technology, consumers and their lived worlds are entangled in the new culture and practice. Indeed, from John's experiences, we can suggest that even though there is certain resistance to the new practices, he has to conform to them in order to gain the efficiency and opportunity created by ITESs.

John's experience demonstrate that the user and the ITESs becomes an entity, in which the human could be ordered by the non-human to engage in actions for the purposes and efficiency of the ITESs. Technology makes the ITESs very efficient and powerful, which could strongly affect consumers' lives by forcing their material agency for the ITESs' own purposes. For example, Smartphone technology enables users to know immediately when there are new emails coming in, while at the same time demanding the users to respond immediately.

From John's experiences, we can see that IT instruments are not a separate entity for humans to act upon for their own purposes. The material agency of the instruments is entwined with human agency, and both are analytically indistinguishable. Due to the entwinement, material agency can impose itself on human agency through its engagement in routine practices, which can further affect the role of human intentionality with the physical and lived world. Human and technology are entwined within John's working practices to the extent that it affects other practices in his life, such as his interactions with his children. Indeed, John and his Blackberry formed a sociomaterial entity, where both human and technology are indispensable to each other. Thus, we could suggest that John's experiences with his devices can only make sense from a relational ontology.

John feels that he could get frustrated, 'neurotic' and feels 'bad'. On one level, the unpleasant experiences of the entanglement with the instrument

affect his hedonic happiness. Indeed, the entanglement of practices can change users' routine practices and affect their quality of life such as reducing the amount and quality of time interacting with family, which in turn can affect John's wellbeing in terms of his assessment of quality of life. These activities can also affect his sense of self-fulfilment, e.g., conative self (life roles), relational self and social roles, which is crucial for his psychological wellbeing. In addition, John has to respond to the technology's order and reorder, which made him feel like he was losing his autonomy and control.

We suggest that the concept of the focal thing would enhance our understanding of consumers' entanglement with ITES devices and the consumer wellbeing derived from these experiences. ITESs and their users are involved in the assemblages in users' lived lives. The technology-human assemblages entail different relationships. Some consumers are engaged in actions to perform the routine tasks by working together with technology for their projects; in such cases, material agency and human agency are held equally. Other consumers are ordered by ITESs for the technology's own efficiency and purpose, and they have to conform to the new practices in order to grasp the opportunities created by the ITESs. And there are consumers who are involved in activities to bring forth the characteristics of the technology. These ontological positions can enable us to understand consumer-ITESs assemblage and the consequent wellbeing in consumer experiences of these assemblages in their daily lives.

Discussion

Our research revealed that relational technology ontological positions provide us with the lens to make sense of consumer experiences of ITESs and the consumer wellbeing derived from them. The entanglement of practices with ITESs and the formation of consumer-ITESs assemblages have significant implications for the design of ITESs, in particular to enhance consumers' wellbeing derived from their ITESs experiences.

'Entanglement Of Practices' And Design Of ITESs

In addition to enhancing functional benefits and experiential pleasures for hedonic happiness (Chitturi, Raghunathan and Mahajan, 2008), we argue that we also need to design ITESs that can empower consumers to perform their routine practices in their lived lives in such a way that can increase their psychological wellbeing.

Consumers and ITESs are intertwined within consumer routine practices. We argue that offerings would represent customers in terms of their routine practices by making sense of the doings and sayings, which are linked by (1) understandings of the social rules and principles; (2) explicit rules and

instructions; and (3) the hierarchies of ends, tasks, projects. Offerings and their use are the crucial elements in the totality of consumers' routine practices. Thus, consumers and the offerings, as a sociomaterial assemblage, produces and reproduces the practices appropriate for the context and strengthens the social relationships, deriving meanings and values.

Dark Side Of Technology And Design Of ITESs

IT devices can form a complex and worrying 'assemblage' with consumers through ITESs such as emails and Skype, which are increasingly becoming part of consumers' lives and play the role of the 'focal'/centre – to the detriment of the human's desires within this assemblage. Consumers and ITESs would be entangled in the practice in which ITESs would appear to order users to act in certain ways for its own purpose of efficiency. This is the dark side of the focal nature of ITESs, which has significant effects on users' subjective and psychological wellbeing. Thus, in the design of these services, designers must consider (1) what is the effect of the pursuit of efficiency or purpose of ITESs through 'objectifying consumers', regarding humans as pure 'standing-reserve' and neglecting human intentionality (Dreyfus, 1996; Introna, 2009) ; and 2) the social role played by the ITESs and its effect on social practices in consumer-ITESs assemblages. Thus, we argue that viewing technology and human as mere entities being held in equal regard in the assemblage, and (2) neglecting the social aspects of ITESs, would result in the design of ITESs that could negatively affect consumers' hedonic and psychological wellbeing.

Focal Things And Virtual Reality

Some ITESs (such as online games) are increasingly mimicking reality. Our research shows that some ITESs such as computer games imitate 'focal things' (Borgmann, 1984) from which consumers can obtain hedonic happiness and some form of psychological happiness. There is however concern that if wellbeing is derived from the virtual world, it could draw users away from the real physical and social world, which can harm them in terms of their authentic happiness and psychological wellbeing. This therefore poses an ethical issue for such ITESs designers. What is beneficial for consumer wellbeing, in particular psychological wellbeing, should determine the practical orientations of these designs.

We suggest that with the shift of our technology ontological position from separatedness to relational, we could make better sense of consumers' experiences of ITESs and consumer wellbeing in consumer entanglement with ITESs. The extant literature on ITESs and consumer wellbeing are primarily descriptive by focusing on the outcomes of using these ITESs. Thus, we argue that the research agenda for service and technology has to be widened to accommodate different ontological positions. Our research

findings can be more prescriptive for designers and managers of ITESs, in terms of how they can design the ITESs to help enhance consumer wellbeing. We argue that consumer wellbeing in ITESs must be viewed from consumer routine practices. ITESs should be viewed as embedded and entangled with consumers in their 'relational totality' in their lived world, in which consumer psychological wellbeing can be understood. In terms of managerial implications, the research findings can inform ITESs designers to (1) use the methods which reflect a more entwined perspective; and (2) consider technology within the practice of its use rather than as separate from consumers' routine practices.

Conclusion

This paper looks at the role of ITESs in consumers' lived lives and its effect on consumer wellbeing derived from their consumption of ITESs. Using cases of consumers' experiences with ITESs and a theoretical framework based on wellbeing and relational ontology by applying Borgmann's focal thing concept aligned with a sociomaterial approach, the paper demonstrates that consumers and ITESs can develop various forms of relationships such as 'entanglement of practices' and 'assemblages'. Our study suggests that ITESs can affect consumer wellbeing (both subjective and psychological) in their consumption of ITESs. This paper shows that technology ontological positions provide an important lens for us to make sense of consumer experiences of ITESs and the consequent consumer wellbeing. Consumer experiences and wellbeing can make better sense when we take the relational ontology position. Given the rapid advancement of pervasive technology, this study has important and timely implications for ITESs design, which can play a significant prescriptive role in the design of ITESs for the purpose of improving consumer wellbeing.

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